

CLAIMS

1. Coded target used in photogrammetry, the target
being circular and comprising at least two concentric
5 coding rings (10, 11) with at least two equal angular
sectors, arranged around a central area (12) comprising
a central disk (13) with a uniform colour surrounded by
a ring with a complementary colour (14), itself
surrounded by a ring (15) the same colour as the
10 central disk (13), characterised in that all sectors in
the first coding ring (10) which is the innermost ring,
are the same colour except for one that is a
complementary colour.

15 2. Target according to claim 1, in which the
central disk (13) is white or black.

3. Target according to claim 1, in which the
second ring (15) that surrounds the first ring (14)
20 surrounding the central disk (13), is thinner than the
first ring (14).

4. Target according to claim 1, in which each
sector in each ring is the same colour.

25 5. Target according to claim 1 comprising a third
coding ring (18), in which the colour of the sectors is
complementary to the colour of the sector adjacent to
the second coding ring (11).

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6. Photogrammetry process using specific coded targets according to any one of the above claims, and software for recognition of these targets on images, characterised in that it comprises the following steps:

- 5 - a step (step 20) for detection of the central area of targets, giving an initial positioning of the targets on the image,
- a precise positioning step (step 21) of the targets taking account of deformations due to
10 perspective,
- a target identification step (step 22) with identification of coding rings and their sectors, evaluation of the colours of the coding rings and management of hidden targets.

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7. Process according to claim 6, in which the detection step (step 20) includes the following operations in sequence:

- 20 - use of an arresting filter, for example such as a Sobel filter or a Canny-Deriche filter, to calculate the gradients in X and in Y (steps 30 and 31),
- calculate the normal to the gradient and its direction (step 32),
- 25 - calculate intersection and direction images (step 33),
- extraction of circles and ellipses (step 34),
- filtering by thresholding (step 35),
- labelling (step 36),
- 30 - filtering by regions (step 37).

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8. Process according to claim 6, in which the identification step (step 22) includes the following operations for each target:

- Adaptive segmentation (step 50),
- 5 - Estimate of circle / ellipse deformations (step 51),
- Regular sampling of rings (step 52),
- Extraction of colour lists (step 53),
- Filtering of lists (step 54),
- 10 - Target identification (step 55).

9. Process according to claim 8, in which the identification step (step 22) also includes management of hidden targets (step 56).

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10. Use of targets according to any one of claims 1 and 5 in the industrial metrology field.

11. Use of targets according to any one of claims
20 1 to 5 in the computer display field.